FY2008 Resources and Services Allocation Request and Proposal

Item	Description
Project Name	Bridge Hydraulics -- Analysis Support for Hydraulics Research in Transportation Applications
Focus Area	Computational Fluid Dynamics
TRACC Contact	David P. Weber/Dr. Tanju Sofu
Requestor Contact Information	Name: xxxxxxx Title: xxxxxx Organization:xxxxxx Address: xxxxx Telephone: xxxxx Fax: xxxx E-Mail:xxxxx
Cognizant Engineer or Sponsor (USDOT, State DOT, TRB, AASHTO, USDOT Cooperative Research Programs)	Name: xxxxxxx Title: xxxxxx Organization: xxxxx Address: xxxxx Telephone: xxxxx Fax: xxxx E-Mail:xxxxx

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Scientific/Engineering Objective	Computational fluid dynamics (CFD) based simulation techniques will be evaluated for open channel flow to address the research needs of the transportation community in a spectrum of focus areas ranging from coastal, inland to environmental hydraulics with initial emphasis on bridge scouring.
Project Description	Bridges provide a critical component of the nation's transportation network. Evaluation of bridge stability after flooding events, including structural response of the bridge itself and the erosion of the riverbed surrounding bridge support structures, is critical for highway safety. Traditionally such evaluations have relied heavily on scaled experiments to provide measurements for flow field and structural response. However, the availability of parallel computers and analysis capabilities of commercially available software provide an opportunity to shift the focus of these evaluations to CFD domain. When validated using the broad experimental database, the use of CFD simulations allow expanded parametric analysis and provide a means of evaluating directly the effects of scaling.

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Item	Description
Supporting Information, Links, and Attachments	
Requested Resources and Services	2008 Allocation Request Historical Allocation Detail As the TRACC Cluster production resources were not available at the start of FY2008, TRACC technical staff, requested and received 100,000 node hours on the ANL JAZZ Cluster for this project, 2008 Allocation Requests = 100,000 (JAZZ Cluster) (2007-09-12 sofu 20,000) (2007-11-06 sofu 30,000) (2007-12-07 sofu 50,000)